Paper No. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex parte YOSIMI NAKASE, SHIGEMI ITOU and MASAHIRO KONDOU

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Appeal No. 2002-0159
Application No. 08/951,317

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ON BRIEF

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Before JERRY SMITH, BARRETT, and GROSS, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1, 2, 4 and 9-18, which constitute all the claims remaining in the application.

The disclosed invention pertains to an ignition coil for an internal combustion engine. One feature of the invention is that it uses high voltage connection structures having relative wider surfaces so as to moderate the electric field between high voltage connection structures and nearby low voltage structures.

Representative claim 1 is reproduced as follows:

1. An ignition coil for an internal combustion engine comprising low tension components including a low tension primary coil, and high tension components including a high tension secondary coil, a high tension terminal, a connecting member for connecting said high tension secondary coil and said high tension terminal, and a control circuit connected to said primary coil for generating a high tension potential at said high tension secondary coil by intermittently supplying current to said low tension primary coil, said ignition coil comprising:
a conductive member, extending axially and circumferentially between said high tension secondary coil and said high tension terminal to have said a high tension potential, thereby providing a conductive surface area to moderate electric field strength around said connecting member, said conductive member being provided substantially from an end of said high tension coil to said high tension terminal.

The examiner relies on the following references:

Oosuka et al. (Oosuka)	5,778,863	July 14, 1998 (filed Dec. 05, 1995)
Endo et al. (Endo)	JP 57-212371	Dec. 17, 1982

Claims 1, 2, 4 and 9-18 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. Claims 1, 2, 4 and 9-18 also stand rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Finally, claims 1, 2, 4 and 9-18 stand

rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Oosuka in view of Endo.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the obviousness rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the specification and the claims are in compliance with 35 U.S.C. § 112, and that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in the claims on appeal. Accordingly, we reverse.

We consider first the examiner's rejection of all the claims on appeal under the first paragraph of 35 U.S.C. § 112. Although the rejection is nominally written as a lack of written

description problem, the examiner also raises the question of enablement. Specifically, the examiner states that "Applicant fails to disclose a written description and schematic of the control circuit connected to the primary coil **for generating a high tension potential at the high tension secondary coil by intermittently supplying current to the low tension primary coil**" [answer, page 4].

Appellants point to portions of the specification which support the claimed control circuit and provide written description support for the claimed invention. Appellants also argue that the claimed control circuit could be of the type shown in the Taruya patent (5,144,935) which was cited by the examiner [brief, pages 11-14].

The examiner responds by simply repeating the general assertions of the rejection and asserting that appellant's arguments do not overcome the rejection [answer, pages 7-8]. Appellants respond that the examiner has failed to address the arguments in the brief and that the diagram shown in Figure 3 of Taruya shows a complete schematic diagram of the claimed switching circuit [reply brief].

We will not sustain this rejection for essentially the reasons argued by appellants in the briefs. The specification of the application discloses the following:

> The control circuit section 7 switches on and off the primary current supplied to the primary coil at suitable timings to provide high tension voltage supplied to the spark plug [page 5, lines 24-27].

We agree with appellants that this disclosure provides written description support for the objected to portion of claim 1 because it clearly establishes that an intermittent current is supplied to the low tension primary coil which generates a high potential at the secondary coil which is connected to the spark plug.

Appellants have also indicated that the control circuit operating as described in claim 1 is nothing more than a prior art control circuit such as the control circuit shown in Taruya which was cited by the examiner in this case. It is not clear to us why the examiner requires a schematic disclosure of this prior art control circuit which is schematically shown in the prior art patent. Since appellants have pointed to a suitable prior art control circuit and since the examiner has offered no cogent rationale as to why this disclosure is not enabling, we do not sustain the rejection of the claims based on lack of enablement.

We now consider the examiner's rejection of all the claims on appeal under the second paragraph of 35 U.S.C. § 112. With respect to claims 1, 4, 9, 10 and 14, the examiner states that appellants "should clarify the specific control circuit **for**

generating a high tension potential at the high tension secondary coil by intermittently supplying current to the low tension primary coil". [answer, page 4].

Appellants argue that this rejection is based on the improper rejection of the claims under the first paragraph of 35 U.S.C. § 112. They argue that they are not required to set forth the specifics of the conventional control circuit within the claim. The examiner responds that the claim language does not support the claimed functions of the not shown or described circuit. The examiner continues that the metes and bounds of the claimed control circuit can not be ascertained from the control circuit described in the specification [answer, page 8].

We will not sustain this rejection of the claims on appeal. We agree with appellants that the examiner has essentially rejected the claims a second time based on the alleged deficiencies noted under the first paragraph of 35 U.S.C. § 112. There is no requirement that appellants include specific limitations of the control circuit within the claims which would only serve to narrow the claimed invention. The examiner has offered no reasonable rationale as to why the artisan would not understand the metes and bounds of the claimed invention. The claimed control circuit is clearly recited as a circuit for intermittently generating current from a primary coil to a

secondary coil. We see no reason why the artisan would not understand what control circuits fall within the scope of the claims.

We now consider the rejection of all claims on appeal under 35 U.S.C. § 103(a). In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying

with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived [see 37 CFR § 1.192(a)].

The examiner finds that Oosuka teaches the claimed invention except for the specific control circuit. The examiner cites Endo as teaching pulse high tension control circuit for an ignition coil of an internal combustion engine. The examiner finds that it would have been obvious to the artisan to substitute the Endo control circuit for the Oosuka control circuit for the purpose of providing stable intermittent operation [answer, pages 5-6].

With respect to independent claims 1, 4 and 14, appellants argue that there is no teaching in Oosuka of the claimed conductive member extending either axially or longitudinally and circumferentially between the high tension secondary coil and the high tension terminal to moderate the electric field strength. Specifically, appellants argue that the examiner's reading of the conductive member on element 33 of Oosuka is without merit because this terminal plate does not provide the features of the claimed conductive member. Appellants also argue that Endo does not overcome the deficiencies of Oosuka [brief, pages 15-17].

The examiner responds by simply repeating the rejection and by asserting that appellants have not shown how the electric field strength created by the claimed conductive member is moderated [answer, pages 8-9].

We will not sustain the examiner's rejection of independent claims 1, 4 and 14 because the examiner has failed to establish a prima facie case of obviousness. Element 33 of Oosuka is described as a terminal plate electrically connected to the secondary coil and serves to supply high voltage from the secondary coil to the spark plug. There is no evidence that this plate extends axially and circumferentially between the high tension secondary coil and the high tension terminal or that it

provides a conductive surface area to moderate electric field strength around the connecting member. The examiner has essentially ignored these specific recitations of independent claims 1, 4 and 14. The examiner's position that appellants have not described how the disclosed and claimed conductive member moderates the electric field strength is not properly addressed in this art rejection. Appellants' specification describes that the larger surface area represented by the conductive members shown in Figures 2, 3 and 5-7 moderates the electric field strength around the connecting member. The examiner has offered no rationale why the truth of appellants' specification should be doubted. Since the examiner has not shown how the conductive member 33 of Oosuka meets the claimed limitations, the examiner has failed to establish a prima facie case of obviousness.

With respect to independent claims 9 and 10, appellants argue that Oosuka fails to disclose an insulating resinous filler having a dielectric constant different from the primary spool, and a shielding portion of the primary spool projecting from an end of the secondary spool to cover the high tension terminal immersed in the insulating resinous filler. Appellants also assert that Endo fails to overcome the deficiencies of Oosuka [brief, page 17].

The examiner responds that the insulating resinous filler 29 of Oosuka and the shielding portion 510a meet the recitations of claims 9 and 10 [answer, page 9].

We will not sustain the examiner's rejection of independent claims 9 and 10 because the examiner has failed to establish a prima facie case of obviousness. Filler 29 of Oosuka is an insulating oil. This is not a resinous filler (claim 9) and there is no disclosure within Oosuka of the dielectric constant of this oil or of the dielectric constant of the primary spool 514 (claims 9 and 10). Although they are different materials, the dielectric constants are not discussed. Claim 9 also recite a shielding portion projecting axially from an end of the secondary spool to cover the high tension terminal immersed in the insulating resinous filler. Claim 10 recites a shielding portion projecting longitudinally from a straight line between the end of the outer periphery of the high tension terminal immersed in the insulating filler. Both claims also recite that the primary coil is not wound on the shielding portion of the primary spool. The examiner has not specifically addressed these limitations of the claims. The shielding portion 510a of Oosuka identified by the examiner refers to a bottom portion of the secondary spool. This does not meet the recitation that the

shielding portion is part of the primary spool or that it is located as claimed.

Since we have not sustained the examiner's rejection of independent claims 1, 4, 9, 10 or 14, we also do not sustain the examiner's rejection of any of the dependent claims. In summary, we have not sustained any of the examiner's rejections of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1, 2, 4 and 9-18 is reversed.

REVERSED

Jerry Smith Administrative Patent Judge	)
Lee E. Barrett Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
Anita Pellman Gross Administrative Patent Judge	)

JE/eld

Nixon & Vanderhye
1100 North Glebe Road
8th Floor
Arlington, VA 22201-4714